NORD DRIVESYSTEMS – The company

Intelligent drive solutions since 1965
Jutta Humbert and Ullrich Küchenmeister: “We produce the drive technology to meet the demands from the market: gear units, electric motors, and drive electronics.”
Since 1965, our family business has developed into one of the world’s leading complete suppliers of mechanical and electronic drive technology. We supply individual drive solutions and our innovations set global standards.

Our focus is to provide you with added value.

Since 1965 we have developed and manufactured all the major components for our mechanical and electronic drive technologies (gear units, electric motors and drive electronics). This wide-ranging in-house design and production capability allows us to offer our customers individual drive solutions. Our extensive manufacturing, test and research facilities feature cutting-edge technology and equipment. With our know-how and experience, we meet the most stringent quality demands. The UNICASE concept, which we developed in 1981 quickly became the international standard for the manufacture of gear unit housings. Today, the focus of our innovation is on intelligent, functionally variable drive technology for Industry 4.0.
The Gear Unit

Our gear units have a high power density and are equipped with exceptionally strong bearings. This ensures high reliability, trouble-free operation and a long service life. Excellent production quality also ensures quiet running.

The Drive Electronics

Our motor starters and frequency inverters are compact, easy to commission and have a consistent programming/parameter structure throughout the range. A comprehensive selection of versions with scalable features and functions ensure that applications are efficiently fulfilled according to requirements.

The Motor

Our high-efficiency motors comply with the highest standards in all regions and therefore can be used globally. We offer drive solutions for the most diversified operating conditions: indoor and outdoor, hot and cold, high hygiene requirements, explosive environments, and more.
1965 G. Schlicht and G. A. Küchenmeister establish the company.

1977 Own gear production in Glinde.

1981 Invention of the UNICASE: «Pioneering invention for the industry.»

1983 Netherlands

1987 Belgium

1984 Own electronics production in Aurich.

1990 Start of global networking: «Global NORDnet ensure fast response capability and high flexibility.»

1986 Canada

1989 Denmark

1979 USA: Production and assembly

1979 France

1979 Sweden

1979 Germany
History

1991 Production of housings and shafts in Gadebusch

1992 Spain

1993 Switzerland

1994 Great Britain

1996 Italy: Motor factory and assembly

1997 Slovakia

1998 Croatia, Finland, Hungary, Norway

1999 Brazil

2000 Product introduction of decentralized drive technology: »A significant benefit for many sectors.«

2001 Indonesia

2002 Product introduction of the NORD worm gear unit modules: »Top flexibility and fast availability.«

2003 Ukraine

2004 China: Production and assembly

2005 Poland: Gear production and assembly

2006

2007

2008 Australia

2009 Product introduction: NORD industrial gear units up to 242,000 Nm.

2012 Korea

2013 Morocco

2015 3,600 employees worldwide subsidiaries in 36 countries 540 Mio. EUR sales
Production

- Production facilities located in Germany, Italy, Poland, the USA and China

- The latest technology for the production of gear units, motors and drive electronics

- Highest quality standards at all facilities

- Dependability, flexibility and always with a view to customer benefits

Production which is environmentally friendly and saves resources is of vital concern to the management:

- Energy-saving thanks to high efficiency

- Produced in environmentally and climate-friendly plants

We are considered to be a technological leader in the development and production of motors, gear units and drive electronics, and work to the highest quality standards. To dependably comply with these standards, we have set up a global network of production facilities for all drive components. Our headquarters with its technology and logistics centre and offices is located in Bargteheide near Hamburg. In addition, we have seven production facilities in Germany, Italy, Poland, the USA and China. Whether it’s gear wheels, shafts, housings, motors or drive electronics – all components are produced in our own production facilities with great dependability and flexibility. We therefore offer our customers throughout the world the best possible quality, regardless of the location and circumstances.
Production

HEADQUARTERS OF GETRIEBEBAU NORD BARGTEHEIDE NEAR HAMBURG, GERMANY
Research and development, logistics centre

NOWA SOL, POLAND
Production and assembly

WAUNAKEE, WISCONSIN, USA
Production and assembly
Production

AURICH IN LOWER SAXONY, GERMANY
Frequency inverter production

GADEBUSCH IN MECKLENBURG-VORPOMMERN, GERMANY
Housing and shaft production

GLINDE NEAR HAMBURG, GERMANY
Gear production

SAN GIOVANNI IN PERSICETO, ITALY
Motor production

SUZhou NeAR SHANGHAI, CHINA
Motor production
- Subsidiaries in 36 countries
- Agencies in 52 countries
- Fast and reliable service in the national language, thanks to local contact partners
Global presence

Corona, California, USA

Charlotte, North Carolina, USA

Guarulhos São Paulo, Brazil

Brampton near Toronto, Canada

Vieux Thann, France

Hillegom near Amsterdam, Netherlands

Zandhoven, Belgium

Abingdon, Great Britain

Oiã Aveiro, Portugal

Sabadell, Spain

Linz, Austria

Arnegg, Switzerland

Upplands Väsby near Stockholm, Sweden
Global presence

Agencies also in:

- Croatia
- Morocco
- Norway
- Romania
- Slovenia
- Ukraine
- Vietnam

Tampere, Finland

Aabenraa, Denmark

Bratislava, Slovakia

St. Petersburg, Russia

Tuzla near Istanbul, Turkey

Tianjin, China

Seoul, South Korea

Pune, India

Singapore, Singapore

Desa Pakulan near Jakarta, Indonesia

Melbourne, Australia
Our production features:

- Great depth of production
- All quality-relevant components from our own production
- State-of-the-art production engineering
- NORDPro (production and quality systems)

For our customers this means:

- Fast delivery
- High operational reliability
- Low maintenance

We have always placed the highest priority in quality, efficiency and economy in the development and production of gear unit components, motors and drive electronics. We use the latest production and quality systems, consisting of KAIZEN, 5S, Visual Management, Shopfloor Management and Quality Circles. On the basis of Lean Production, we are well on the way to Industry 4.0.

We have a great depth of production: all quality-relevant components of our drive solutions are produced in our own factories using advanced machinery and highly qualified employees. Our products therefore provide great operational reliability, low maintenance and an especially long service life.
Industry 4.0 in use – partially autonomous processes in housing production

High flexibility through our own motor production

Drive electronics from our own production since 1984
Manufacturing

Vacuum hardening plant for top quality gear production

Great depth of production for quality-relevant components such as hollow shafts
Our quality is based on:

- The latest production methods in all production facilities
- Qualified employees
- Global quality management
- DIN ISO 9001, DIN 3990, NIEMANN, AGMA, ATEX

For our customers this means:

- Dependability
- Safety
- Long service life for our products

With all of our products, our customers can depend on the very highest quality. Future-oriented production methods, qualified employees and consistent quality management sustainably ensure the performance and durability of our innovative drive solutions. We have the procedures, products and especially hold customer benefits in full view, in every phase of development and production.
Quality

Mechanical quality testing with networked measuring equipment

Automatic visual quality assurance of populated circuit boards - individual assessment by employees

Measurement of castings with 3D scanner
Quality

Acoustic chamber for noise emission testing

Application test area for testing of NORD drive solutions
NORD modular products

The Drive Solutions

The Drive Electronics
From the three components - gearbox, motor and drive electronics - the NORD product package provides an optimal and individual drive solution. The modular products are perfectly matched and can be combined in many variants. In addition, we offer planning, project management, installation, and service from a single source. If desired, industry solutions can be configured as a complete logistics package, programmed and ready for use. Each of the modular NORD products combines: highest product quality, short planning and assembly times, high delivery availability, and a good price/performance ratio. Our products are also available in ATEX certified versions.
### Geared motors

#### UNICASE helical gear units
- Foot or flange mounted
- Long life, low maintenance
- Optimum sealing
- UNICASE housing

<table>
<thead>
<tr>
<th>Sizes</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>0.12 – 160</td>
</tr>
<tr>
<td>Nm</td>
<td>10 – 26,000</td>
</tr>
<tr>
<td>i</td>
<td>1.35:1 - 14,340.31:1</td>
</tr>
</tbody>
</table>

#### NORDBLOC.1® helical gear units
- Foot or flange mounted
- Die-cast aluminium housing
- UNICASE housing
- Industry standard dimensions

<table>
<thead>
<tr>
<th>Sizes</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>0.12 – 37</td>
</tr>
<tr>
<td>Nm</td>
<td>30 – 3,300</td>
</tr>
<tr>
<td>i</td>
<td>1.07:1 – 456.77:1</td>
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</tbody>
</table>

#### UNICASE parallel geared units
- Foot mounted, flange mounted or hollow shaft mounted
- Hollow or solid shaft
- Compact design
- UNICASE housing

<table>
<thead>
<tr>
<th>Sizes</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>0.12 – 200</td>
</tr>
<tr>
<td>Nm</td>
<td>110 – 100,000</td>
</tr>
<tr>
<td>i</td>
<td>4.03:1 – 6,616.79:1</td>
</tr>
</tbody>
</table>

#### NORDBLOC.1® bevel gear units
- Up to 97 % efficiency
- Foot mounted, flange mounted or hollow shaft mounted
- Hollow or solid shaft
- UNICASE housing

<table>
<thead>
<tr>
<th>Sizes</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>0.12 – 9.2</td>
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<tr>
<td>Nm</td>
<td>50 – 660</td>
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<tr>
<td>i</td>
<td>3.03:1 – 70:1</td>
</tr>
</tbody>
</table>

#### UNICASE helical worm gear units
- Foot mounted, flange mounted or hollow shaft mounted
- Hollow or solid shaft
- UNICASE housing

<table>
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</thead>
<tbody>
<tr>
<td>kW</td>
<td>0.12 – 15</td>
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<tr>
<td>Nm</td>
<td>94 – 3,058</td>
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<tr>
<td>i</td>
<td>4.40:1 – 7,095.12:1</td>
</tr>
</tbody>
</table>

#### UNIVERSAL SI worm gear units
- Modular
- Universal mounting
- Life-long lubrication

<table>
<thead>
<tr>
<th>Sizes</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>0.12 – 4.0</td>
</tr>
<tr>
<td>Nm</td>
<td>21 – 427</td>
</tr>
<tr>
<td>i</td>
<td>5.00:1 – 3,000.00:1</td>
</tr>
</tbody>
</table>
NORD is the only manufacturer which produces modular industrial gear units with an output torque of up to 250,000 Nm in a one-piece UNICASE housing.

**UNICASE bevel gear units**
- Up to 97% efficiency
- Foot mounted, flange mounted or hollow shaft mounted
- Hollow or solid shaft
- UNICASE housing

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<tbody>
<tr>
<td>kW</td>
<td>0.12 – 200</td>
</tr>
<tr>
<td>Nm</td>
<td>180 – 50,000</td>
</tr>
<tr>
<td>i</td>
<td>8.04:1 – 13,432.68:1</td>
</tr>
</tbody>
</table>

**Industrial gear units MAXXDRIVE™**
- All bearing contact and sealing surfaces are machined in one operation
- No separating joints in the housing, therefore no sealing surfaces subject to torque
- High-precision axis alignment, quiet running
- Long life, low maintenance
- Gear ratio range 5.54 to 400:1 with the same foot dimensions
- Parallel axis and right-angled gear units

<table>
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<tbody>
<tr>
<td>kW</td>
<td>1.5 – 4,000</td>
</tr>
<tr>
<td>kNm</td>
<td>15/20/25/30/40/50/75/110/150/190/250</td>
</tr>
<tr>
<td>i</td>
<td>5.60:1 – 30,000:1</td>
</tr>
</tbody>
</table>

**UNIVERSAL SMI worm gear units**
- Smooth surfaces
- Life-long lubrication

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NORD gear motors and industrial gear units are also available in ATEX certified versions.
Drive electronics

Functions
- High precision regulation with current vector control
- Compatible with all common bus systems
- 4-quadrant operation
- PLC functionality for tasks close to the drive unit
- Energy-saving function for partial load operation
- Control and parameterization tools and simple parameter structure
- Integrated line filter for compliance with EMC regulations
- Operation of asynchronous and synchronous motors
- Control and closed loop regulation
- POSICON – Integrated positioning mode and synchronization
- STO and SS1 – Integrated functional safety
- Integrated brake rectifier for motor brake control

Advantages
- Scalable functionality – flexible configuration and function
- High torque capability for every drive application
- Simple commissioning and operation

Special features
- Motors developed and produced by NORD
- We produce energy-efficient products for all parts of the world
- Products available at all international sites

Motors
- Energy-saving motors
- Switchable pole motors
- Single phase motors
- Smooth motors
- Explosion protected motors
  - Gas atmospheres
- Explosion protected motors
  - Dust atmospheres

NORD drive electronics is available in ATEX certified versions.

IES2

All combinations of NORD products feature the highest system efficiency level IES2.
NORDAC PRO: Control cabinet inverter SK 500E

The frequency inverter for all drive applications: wide power range and capability of extension of functionality with plug-in option modules. Heat removal is optimized thanks to the variable cooling concept.

Nominal ratings:
- Power range up to 160 kW
- Control cabinet installation
- IP20

NORDAC FLEX: SK 200E decentralized frequency inverter

Decentralized drive unit with versatile installation possibilities. Simple commissioning and maintenance through extensive plug-in capability and simple parameter transfer via EEPROM.

Nominal ratings:
- Power range up to 22 kW
- Wall or motor installation
- IP55, IP66

NORDAC BASE: Decentralized frequency inverter SK 180E

Economical decentralized version for simple drive applications. Low installation costs as well as robust design for simple installation outside the control cabinet.

Nominal ratings:
- Power range up to 2.2 kW
- Wall or motor installation
- IP55, IP66, IP69K

NORDAC START: Motor starter SK 135E

The decentralized starter for all types of soft starting. With integrated motor protection and reversing function for flexible integration into the system.

Nominal ratings:
- Power range up to 7.5 kW
- Wall or motor installation
- IP55, IP66, IP69K

NORDAC LINK: Frequency inverter SK 250E

The field distribution system for flexible, decentralized installation. Flexible configuration and function - freely configurable according to requirements and application. Available as inverter and starter. Fast commissioning through high level of plug-in capability. Simple servicing of the system through integrated maintenance switch and local manual control facility.

Nominal ratings inverters:
- Power range up to 7.5 kW
- Field installation
- IP55, IP65

Nominal ratings starter:
- Power range up to 3 kW
- Field installation
- IP65

NORDAC FLEX: SK 200E decentralized frequency inverter

Decentralized drive unit with versatile installation possibilities. Simple commissioning and maintenance through extensive plug-in capability and simple parameter transfer via EEPROM.

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- Power range up to 3 kW
- Field installation
- IP65
Industry 4.0 READY!

- Lean Production: NORDPro production system at all locations
- Global network via ERP system
- Fully integrated and automated production control
- 100% transparent assembly
- RFID-controlled painting system
- Reliable delivery: orders are fully tracked
- Continuous development

For our customers this means:

- Future-proof products

We took the essential steps on the road to Industry 4.0 at a very early stage. For example: the networking of all our motor testers worldwide, the use of articulated arm robots since 1988 and the implementation of Lean Production in 2008. Our NORDPro production and quality system now controls processes worldwide. All factories are linked via SAP, each order starts an automatic system from the configuration of the product up to dispatch. Our objective is to make our processes even more efficient and also transparent for our customers. In cooperation with universities and institutes we develop new technologies for the further digitalization of production and logistics.
Industry 4.0 READY!

Customer

Product

Service

Logistics

DRIVESYSTEMS

Actuators

Sensors

EtherCAT
EtherNet/IP
POWERLINK
PROFIBUS
CANopen
DeviceNet

data
For our customers, we are represented on all five continents.

We are your reliable partner, 24 hours a day, 7 days a week.
From planning through production and assembly to service – we offer everything from a single source. We are experienced and complete suppliers of mechanical and electronic drive solutions and a dependable partner for our customers throughout the world in every phase of the project. We utilise our know-how and experience and from the first stages of development and conception. We orient ourselves to the individual requirements of our customers in their particular industries. During assembly and commissioning, we are only satisfied when everything runs smoothly – even if things are needed fast. Afterwards our service is available to our customers around the clock.
Solutions

- Solutions for more than 100 industries
- Satisfied customers around the world
- Security from planning to commissioning
- Flexibility due to the world’s largest modular system

Our drive technology keeps things moving all over the world, safely and with flexibility: we offer a wide range of mechanical, electrical and electronic drive solutions for more than 100 industries. From the steel industry to logistics, from the food industry to handling of bulk materials – we have the necessary knowledge and offer both standardised and individually configured solutions for all areas. Our expertise is our knowledge gained over decades of experience in producing, processing and transporting industries. Customers around the world appreciate the efficiency, safety and reliability of our products.
Solutions

Conveyor technology for robust applications

Drive solution for agitator technology
Solutions

Drive solutions for the beverage industry
Drive solution for cable lifts
Drive solutions for breweries
Conveyor technology with networked drive technology for parcels in postal distribution centre
The Employees

Satisfied employees are the key to our worldwide success.

We provide first-class working conditions at each of our sites:

- We focus on comprehensive occupational safety, individual training and advanced training options for our employees.

- Year on year we pave the way for many young people to enter the working world.
The Employees

Gear unit assembly in Production

Production of NORD drive electronics since 1984

Future with NORD - our trainees and students

Global service by qualified employees
The myNORD portal provides quick and practical support for your day-to-day work.

- Simple, intuitive configuration of drive units
- All standard products with 3D models, dimension sheets and outline drawings
- Rapid order tracking in real time
- Immediate issue of proposals and offers

For our customers this means:

- Future-proof products
The myNORD customer portal

myNORD-portal: practical and fast support for everyday work

- Configure NORD products
- Track order status
- Create offers with cost prices
- Directly download CAD data

Register now at: my.nord.com
Technical complexity of product solutions

Size of enterprise
Headquarters:
GETRIEBEBAU NORD GMBH & CO. KG
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Tel.: +49 4532 289-0
Fax: +49 4532 289-2253
info@nord.com

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